

# **nova™** **COMET I4 DR**

## **STORE GUIDE**

The NOVA Comet 14 DR continues the legacy of the Comet Midi Lathe with expanded capacity and digital functionality. Solid cast iron lathe with Digital Readout and a 14" Swing Capacity. The NOVA Comet 14 DR is the perfect solution for a wide variety of projects from small pens to larger bowls and platters.



SKU: 46900  
teknatool.com

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## VERSATILE VARIABLE SPEED RANGE

2-step Electronic Variable Speed range.

Low range: slower speeds from 250 RPM up to 1,100 RPM for larger spindle and bowl work.

Fast range: from 750 RPM up to 3,450 RPM for miniature turning work and sanding



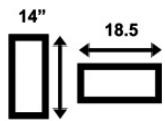
## EASY TO USE SPEED DIAL ADJUSTMENT

Quickly dial-in the correct speed for the job, material and conditions. You're not limited to potentially dangerous fixed-speed steps. The NOVA Comet 14DR is the perfect solution for a wide variety of projects from small pens to larger bowls and platters. The easy to read screen lets you know at what speed you are turning.



## FORWARD AND REVERSE

Quickly and easily change direction between forward and reverse. This offers you additional flexibility and allows you to achieve a superior finish, reducing the need for extensive sanding.



## 14" SWING 18.5" BETWEEN CENTERS

14"/355mm Capacity Over Bed

18.5"/469mm Between centers standard

44.1"/1,120mm between centers with ONE extra accessory bed extension (extra purchase) to extend the beds as long your project demands.



## CAST IRON CONSTRUCTION

CAD designed webbing to absorb vibration throughout the bed length. Exceptional structural strength, precision machined for superior fit and finish.

## EASY BELT/PULLEY ACCESS

Quick and easy to lift cover and adjust belt.

## STRONG 2MT SPINDLES

The precision machined 2MT allows for quick and secure mounting of accessories.

## QUICK ACTION CAM CONTROLS

With comfortable rubber grip for fast and secure locking

## LARGE RANGE OF NOVA ACCESSORIES

NOVA Chucks and Jaws, Faceplates, Chisels, Centers all enhance your use of the NOVA Comet 14DR Midi Lathe.

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Swing Over Bed  
 Distance Between Centers  
 Swing Over Tool Rest Base  
 Maximum distance  
 Tool rest to spindle center  
 Footprint  
 Weight  
 Spindle Thread  
 Headstock Spindle taper  
 Spindle bore  
 Quill taper  
 Tool rest width  
 Tool rest shaft diameter  
 Tool rest post length  
 Tool rest base height  
 Bed  
 Frame, headstock, tailstock  
 Paint type/finish  
 Bed width  
 Faceplate size  
 Input voltage  
 Input frequency  
 Full Load Input Current Rating  
 Power Input Plug Type  
 Motor type  
 Motor power output  
 Motor speed  
 Phase  
 Input current

| Imperial/Metric                         |
|-----------------------------------------|
| 14"/356mm                               |
| 18.5"/469.9mm                           |
| 11.25"/ 285.75mm                        |
| 8.5625"/217.49mm                        |
| 32.4"/822.32mm (L) x<br>8.5"/215.9mm(W) |
| 103.6 lb/47 Kg                          |
| 1" x 8TPI (Right Hand Thread)           |
| Morse Taper 2MT                         |
| .4"/10.31mm                             |
| 2MT Morse Taper                         |
| 6"/152.4mm                              |
| 1"/25.4mm                               |
| 3.5"/88.9mm                             |
| 3.125"/84.14mm                          |
| Precision – ground cast iron            |
| Cast iron and steel                     |
| Enamel/powder coat                      |
| 8"/203.2mm                              |
| 3.14"/80mm                              |
| 120v                                    |
| 60Hz                                    |
| 7.3A                                    |
| NEMA 5-15P                              |
| Universal Brush Type                    |
| 75KW (1HP)                              |
| 1,400 RPM                               |
| Single Phase                            |
| 7.3A                                    |



## **FEATURES TO POINT OUT:**

1. 14" Swing over the bed- Additional capacities versus the competition and no accessories to buy
2. 1HP Motor
3. Digital Readout – no guesswork on recommended speed
4. 18.5" Between Centers with 44" if you add the 46901 Bed Extension
5. Easy Belt change access and lock handle for tensioning
6. Two Speed RPM Range: Low 250-1,100 RPM and High 750- 3,450RPM
7. 1" Tool Rest Post, with 6" Tool Rest is part of the Nova Modular System which allows additions rests to be added easily and economically
8. Forward and Reverse for Turning and Sanding
9. Quill Pin Lock to eliminate rotation of the quill if handle not locked
10. Scale on tailstock for accurate adjustments
11. 12 Step Indexing
12. 1" X 8TPI Spindle with 2 MT for all your favorite accessories
13. Includes 3" Faceplate, 6" Modular Toolrest, (2) Live Centers, Spur Center, and Knockout bar
14. Stand 47050 and Bed Extension 46901 available as accessories



## MOTOR BREAK IN OPERATION

Run the lathe motor without any load for approximately 30~45 minutes before you start using the lathe to cut wood/ or applying a significant load. The motor and bearings break-in should be done at the fastest speed possible and not be unattended.

The NOVA COMET 14DR features a variable speed DC motor that contains brushes that make physical contact with the motor rotor. For the best motor performance and life, the motor brushes should be slightly worn out to ensure the brushes are making good contact.

**Note:** A clicking/swishing noise in the motor is normal which will reduce as the brushes wear in.

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Before plugging the NOVA COMET 14DR lathe, shut off the power source in your shop

The power cord installed on the NOVA COMET 14DR lathe will have a grounding three-prong plug. The plug must be connected to a matching outlet that is properly installed and grounded in accordance with local electrical codes.

**For 115V outlet only:**

A temporary adapter can be used to plug into a two-pole outlet if a three-prong outlet is unavailable in your environment. The ground tab on the adapter must be connected to the screw on the outlet for proper grounding. This adaptor should only be used until a qualified electrician can install a properly grounded outlet.

➤ **Note:** If an extension cable is required, make sure to check the following:

1. Extension cable gauge
2. Is the cable properly insulated?

If in any doubt, please contact your local electrician to inspect the cord according to the local electrical standards before using it.

**Surge Protection (Ground Fault Interrupters (GFI) / Residual Current Detectors (RCD)**

It is recommended to use a surge protection device rated to 15A for the best protection of the lathe. GFI and RCD are the recommended standard type of surge protection device.

Note: We don't recommend using an extension cord. If you have to use an extension cord, it should be a 10 or 12 gauge wire and no more than 12 feet long.



Figure 1 - 110v Outlet



Figure 2 - 220v Outlet



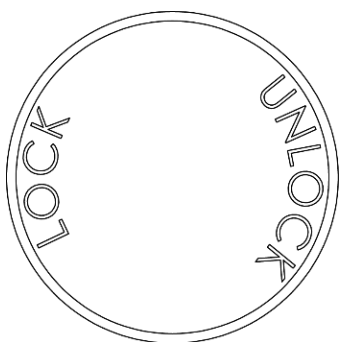
## USING THE SPINDLE INDEX

There are 12 index positions on the NOVA Comet 14 DR spindle; 30° apart.

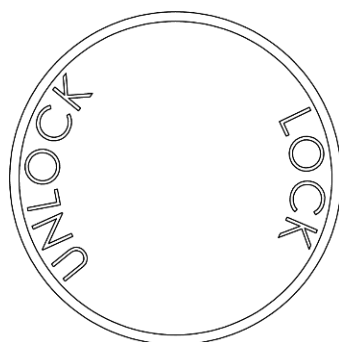
### Locking and Unlocking the Spindle

Pull the lock pin away from the headstock and turn the lock pin 180° to switch between the lock and unlock positions.

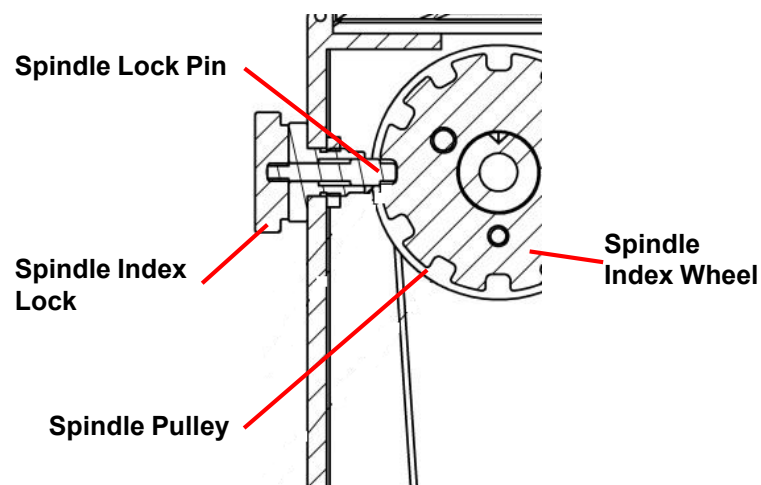
Looking from the back side of the lathe, the state that is described on the right-hand side shows the spindle lock state:



Unlocked Position



Locked Position







## CHANGING THE SPEED

Turn the knob clockwise to increase spindle speed.

Turn knob in counter-clockwise to reduce the spindle speed.



Decrease  
Speed

Increase  
Speed

NOVA COMET 14 DR features two speed positions:

| Speed Band                                    | RPM Range   | Type of Work                                      |
|-----------------------------------------------|-------------|---------------------------------------------------|
| 1<br>(Motor pulley small, Spindle pulley big) | 250 ~ 1900  | Large faceplate and spindle work                  |
| 2<br>(Motor pulley big, Spindle pulley small) | 1901 ~ 3450 | Small turning, Sanding and miniature turning work |





## SWITCHING BETWEEN FORWARD AND REVERSE

The forward and reverse can be switched by holding down the **<FWD/ REV>** key until the LED light starts flashing on the alternative line.

Press the **<FWD/ RED>** key once before to make the LED solidly lit before pressing the **<ON>** button to start the lathe motor



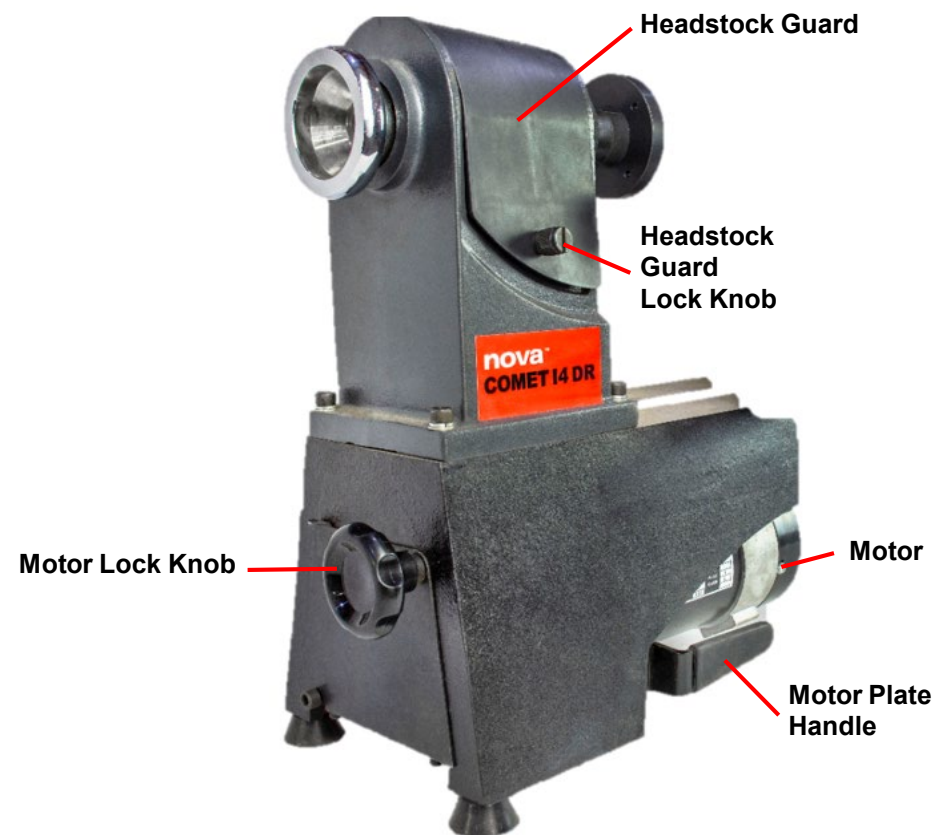
Long Press



## CHANGING BELT POSITIONS

Ensure the lathe is powered off and disconnected from the power source before commencing to change the belt positions on the lathe to avoid accidental motion during the belt changing procedure. Loosen Motor Lock Knob before lifting the handle. Lift the Motor Place Handle upwards to unlock the motor relieving tension on the belt. Unscrew the headstock guard knob to unlock the headstock guard.

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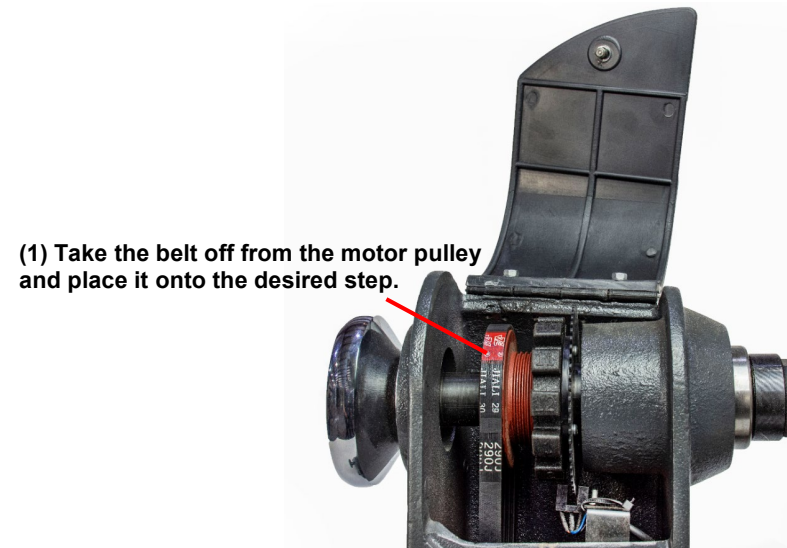
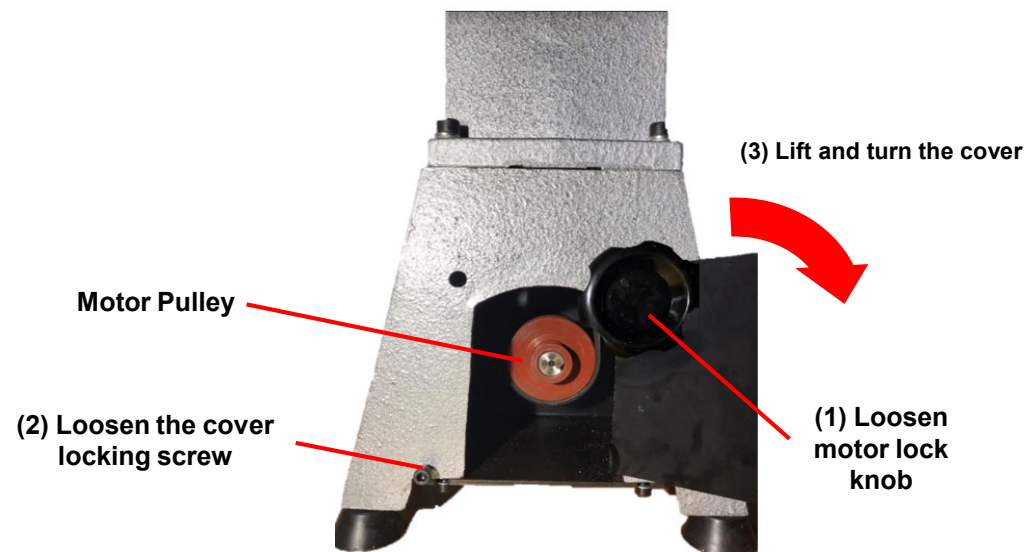




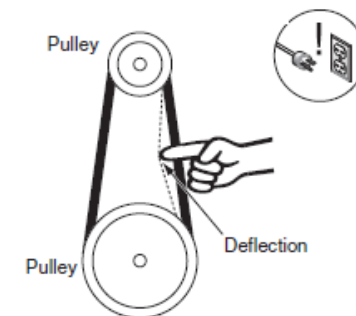
## CHANGING BELT POSITIONS (CONT.)

Open the bed belt cover by loosening the motor lock knob to gain access to the motor belt pulley. Lift the headstock guard to open and gain access to the spindle pulley + belt.

Remove the drive belt from the motor pulley by lifting the motor handle plate and making enough space. There will be approximately  $\frac{3}{4}$ " (20mm) of vertical movement on the motor handle



1. Place the belt onto the desired spindle pulley once the belt is removed from the motor pulley.
2. Place the belt on the corresponding step on the motor pulley.
3. Apply a firm downwards force by a thumb onto the motor handle plate to tension the belt.
4. **Caution:** Excessive belt tension may cause the belt or the pulleys to break.
5. Turn the bed belt cover to close and relock the cover.
6. Tighten the motor locking knob while applying correct tension.
7. Check the belt tension by applying moderate pressure at approximately halfway between the spindle pulley and the motor pulley. The belt should have a deflection of approximately  $\frac{1}{2}$ " (13mm) when an appropriate tension is applied on the belt.





## TROUBLESHOOTING MECHANICAL ISSUES

| Symptom                                                                                          | Place to check                                                                                                                                                                                                                      | How to resolve                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Excessive Vibration</b>                                                                       | <ol style="list-style-type: none"> <li>1. Work attached to the lathe</li> <li>2. Lathe Mounting (either on bench or stand)</li> </ol>                                                                                               | <p>Slow the lathe speed down</p> <p>Add weight to the machine or bolt the machine down to a solid platform. Check the spindle runout by using a *DTI.</p>                                                                                                                                                                                                                               |
| <b>Faceplate/chuck not running true</b>                                                          | <ol style="list-style-type: none"> <li>1. Back of face plate</li> <li>2. Threads (Inner threads on faceplate and spindle thread on headstock)</li> <li>3. Front of face plate</li> <li>4. Chuck threads</li> <li>5. Jaws</li> </ol> | <ol style="list-style-type: none"> <li>1. Ensure the back of the faceplate is making firm contact with the spindle base.</li> <li>2. Check the lathe spindle thread by using a *DTI to ensure the spindle itself is running true.</li> <li>3. Make sure face plate is flat</li> <li>4. Chuck is fully tightened on to the spindle</li> <li>5. Jaws are installed properly</li> </ol>    |
| <b>Turning tools not sliding smoothly across Tool rest</b>                                       | Tool rest surface / Bed Surface                                                                                                                                                                                                     | <ol style="list-style-type: none"> <li>1. Ensure the tool rest surface and bed is smooth without any chips, cracks or burrs.</li> </ol>                                                                                                                                                                                                                                                 |
| <b>Spur Drive Center/Live Center not holding into the spindle taper/quill taper when turning</b> | <ol style="list-style-type: none"> <li>1. Morse Taper surface</li> </ol>                                                                                                                                                            | Clean the Morse Taper surfaces (both tool and spindle) with a cleaning agent. Should also mention if mounted in tailstock. A live center will not be used in a headstock                                                                                                                                                                                                                |
| <b>Tailstock and Headstock center not lining up correctly</b>                                    | <ol style="list-style-type: none"> <li>1. Headstock alignment</li> </ol>                                                                                                                                                            | Loosen the headstock casing from the bed and make the required adjustment.                                                                                                                                                                                                                                                                                                              |
| <b>Tailstock Handwheel hard to turn or will not turn</b>                                         | <ol style="list-style-type: none"> <li>1. Quill lock</li> <li>2. Inside the tailstock quill housing</li> <li>3. Quill internal threads</li> </ol>                                                                                   | <p>Check if the quill lock is not engaged.</p> <ol style="list-style-type: none"> <li>1. Remove the tailstock quill from the tailstock body and inspect both quill surface and quill housing surface.</li> <li>2. Clean the quill and quill housing to ensure no foreign materials exist.</li> <li>3. Lubricate both quill and housing surface and reassemble the tailstock.</li> </ol> |
| <b>Tailstock binds</b>                                                                           | <ol style="list-style-type: none"> <li>1. Lathe bed</li> <li>2. Tailstock adjustment plate</li> </ol>                                                                                                                               | <ol style="list-style-type: none"> <li>1. Slide off the entire tailstock from the lathe bed and inspect the top lathe bed surface and bottom tailstock surface.</li> <li>2. Apply light lubricant to the top lathe surface if there are no defects on both surfaces.</li> <li>3. Adjust tail stock nut tension</li> </ol>                                                               |

\*Dial Test Indicator



## TROUBLESHOOTING ELECTRICAL ISSUES

| Symptom                                                    | Place to check                                                                                                     | How to resolve                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lathe does not turn on<br>(No lights on the control panel) | <ol style="list-style-type: none"><li>1. Power source</li><li>2. Fuse/Reset button</li><li>3. Controller</li></ol> | <ol style="list-style-type: none"><li>1. Check power source is providing power</li><li>2. Check the fuse/reset button is not popped out. Press the reset switch and repower on the lathe</li><li>3. If the above 2 solutions did not resolve the problem, may require replacing the controller. Please contact our customer services: <a href="mailto:service@teknatool.com">service@teknatool.com</a></li></ol> |



# PACKAGE CONTENTS



SKU: 46900  
teknatool.com

To order, contact Marisol Edwards  
727 954 3433 x700  
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| Item # | Description                           | SKU     | Qty |
|--------|---------------------------------------|---------|-----|
| 1      | Comet 14 DR Lathe                     | 46900   | 1   |
| 2      | Faceplate                             | 4718065 | 1   |
| 3      | Spanner                               | 4718071 | 1   |
| 4      | Heavy Duty Live Center                | 4718069 | 1   |
| 5      | Live center                           | 4718066 | 1   |
| 6      | Spur center                           | 4718064 | 1   |
| 7      | 3mm Hex Key                           | AK03    | 1   |
| 8      | 5mm Hex Key                           | AK05    | 1   |
| 9      | 8mm Hex Key                           | AK08    | 1   |
| 10     | Operating/Knock Out Bar               | 4718071 | 1   |
| 11     | Handwheel                             | 471834  | 1   |
| 12     | Handwheel Handle (not pictured)       | 4718035 | 1   |
| 13     | Handwheel Handle Screw (not pictured) | 4718036 | 1   |
| 14     | Power Cord (not pictured)             | 4718063 | 1   |
| 15     | Tool Holder                           | 4718072 | 1   |
| 16     | Tool Rest Post                        | 9025    | 1   |
| 17     | Tool Rest Bar                         | 9027    | 1   |